

# **GUIDANCE FOR HAZARDOUS WASTE REMEDiation**

## **RR-705**

**WISCONSIN DEPARTMENT OF NATURAL RESOURCES**

**BUREAUS FOR  
REMEDiation AND REDEVELOPMENT  
AND  
WASTE AND MATERIALS MANAGEMENT**

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## **TABLE OF CONTENTS**

- I. Introduction
  - A. Purpose of Guidance
  - B. Disclaimer
  - C. Background and History
    - 1. Federal Rules and Guidance
    - 2. State Specific Information
- II. Hazardous Waste Determinations
  - A. Listed Wastes
  - B. Characteristic Wastes
  - C. Determining if Contaminated Media is Hazardous Waste
    - 1. Exclusions
      - a. Petroleum Contaminated Media
      - b. Manufactured Gas Plant Waste
    - 2. Process
  - D. Land Disposal Restrictions
- III. Management Options for Contaminated Media Defined as Hazardous
  - A. Exemptions by Rule
    - 1. Wastewater Discharges
    - 2. Reinjection of Contaminated Groundwater
    - 3. Treatment in Containers and Tanks
  - B. Hazardous Waste Operating License
  - C. Hazardous Waste Variances
    - 1. Applicability to Remediation Cases
    - 2. Undue or Unreasonable Hardship Criteria
    - 3. Information necessary for Remediation Variances
    - 4. Processing Variance Requests
  - D. Area of Contamination (AOC) Policy
  - E. Corrective Action Management Units (CAMU's)
- IV. Determining Contained-Out Concentrations for Contaminated Media
  - A. Listed Waste
  - B. Characteristic Waste
- V. Redevelopment Issues

## I. INTRODUCTION

Numerous questions have been raised regarding the applicability of hazardous waste rules and guidance to cleanup and redevelopment cases. Inconsistent interpretations of existing U.S. Environmental Protection Agency (EPA) guidance and policy documents as they relate to cleanup cases have also arisen. In order to address a number of these situations, the Wisconsin Department of Natural Resources (WDNR) submitted 5 separate letters to EPA-Region 5 identifying the specific issues and proposing an approach for addressing each of them. Responses to all of these letters have been received from EPA, and these documents can be found on the Remediation and Redevelopment (RR) Program's web site at:

[http://dnr.wi.gov/org/aw/rr/cleanup/hazardous\\_waste.htm](http://dnr.wi.gov/org/aw/rr/cleanup/hazardous_waste.htm)

Specific links to these letters along with a number of other related WDNR and EPA information are contained within this document. This information helped form the basis for development of this guidance.

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### A. Purpose of the Guidance

The purpose of this document is to provide WDNR staff, responsible parties and other interested individuals with guidance on the requirements that apply and the options that are available when dealing with cleanup and redevelopment issues at sites that are or may be contaminated with hazardous waste. Process wastes generated during the treatment of contaminated media must meet all applicable regulatory requirements. Implementation of this guidance is intended to result in the best environmental outcome at the most reasonable costs while complying with the hazardous waste requirements applicable to contaminated media. This document replaces all existing guidance regarding hazardous waste remediation, including the May 20, 1997 memo entitled: "Guidance and Direction on the Handling of Hazardous Waste Remediation Cases", unless otherwise specified herein.

### B. Disclaimer, Contact and Revisions

This document is intended solely as guidance, and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. This guidance does not establish or affect legal rights or obligations and is not finally determinative of any of the issues addressed. This guidance does not create any rights enforceable by any party in litigation with the State of Wisconsin or the Department of Natural Resources. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying governing statutes and administrative rules to the relevant facts.

This guidance will be updated as needed. Questions, comments and concerns may be sent to Gary Edelstein, P.E. - RR/3, WDNR, P.O. Box 7921, Madison, WI 53707, phone number 608-267-7563, email Gary.Edelstein@dnr.state.wi.us.

### C. Background and History

The Federal hazardous waste program began in 1976 when Congress passed the Resource Conservation and Recovery Act (RCRA). Subtitle C of that law created the program and directed EPA to develop regulations defining what are hazardous wastes and the appropriate management standards. When the RCRA Subtitle C rules were being developed in the late 1970's, their applicability to contaminated media was not considered. In November, 1986 EPA issued a memo entitled: "RCRA Regulatory Status of Contaminated Groundwater" available here:

[http://dnr.wi.gov/org/aw/rr/cleanup/haz\\_waste\\_docs/number1.pdf](http://dnr.wi.gov/org/aw/rr/cleanup/haz_waste_docs/number1.pdf)

The memo indicated that while contaminated environmental media was not itself a hazardous waste, it needed to be managed as a hazardous waste if it "contained" a listed waste or exhibited a hazardous characteristic. The memo went on to say that if groundwater was treated to health based levels and/or was treated to not exhibit a hazardous characteristic, then the media would no longer be defined as a hazardous waste. This position was known as the "contained-in" policy and was the subject of a lawsuit filed by numerous interested parties. Ultimately, the Court of Appeals for the Washington D.C. Circuit upheld EPA's ability to define contaminated media as hazardous waste if it contained a listed waste or exhibited a hazardous characteristic.

#### 1. Federal Rules and Guidance

Since EPA's initial decision to apply the Subtitle C requirements of RCRA to contaminated media, they have issued several major rules along with numerous policy memos and guidance documents clarifying the applicable requirements. In general, these documents have provided for a more flexible approach in order to help ensure that contaminated sites are investigated and remediated in a timely manner. A good summary of many of these provisions is included in a document entitled: "Management of Remediation Wastes under RCRA", a copy of which can be found at:

<http://www.epa.gov/Compliance/resources/policies/civil/rcra/remediawaste-rpt.pdf>

#### 2. State Specific Information

When Congress promulgated the original RCRA Subtitle C Statute, its intent was that States be delegated the authority to implement these requirements provided that their programs were equivalent to and not inconsistent with the Federal Program. EPA then developed regulations that set forth the requirements for States to obtain "authorization" to implement the Hazardous Waste Program in lieu of EPA. WDNR is currently authorized to implement 2 major portions of the Program including: RCRA Closures and

RCRA Corrective Action. In addition, the NR 600 series has been revised to include other cleanup components, including the Phase IV Land Disposal Restrictions (LDRs), the new Corrective Action Management Unit (CAMU) rule and the provisions to reinject contaminated groundwater for clean up purposes. WDNR has independent authority under state law to implement Wisconsin's hazardous waste management program, and has adopted some requirements that are more stringent or broader in scope than the Federal program.

In the early 1990's the Department undertook an effort to implement a consolidated cleanup program including the development of comprehensive cleanup rules. This approach envisioned a process by which site investigation, remedy evaluation and selection, development of cleanup standards, and case closure would be the same for every site regardless of the regulatory authority being used to compel the cleanup. This effort resulted in the promulgation of the ch. NR 700 series rules for cleanup.

A series of discussions on the applicability of this consolidated cleanup program to RCRA remediation cases took place with EPA during the fall of 1995. On December 15, 1995 EPA provided their initial feedback on the Department's proposal in this letter:

[http://dnr.wi.gov/org/aw/rr/cleanup/haz\\_waste\\_docs/number3.pdf](http://dnr.wi.gov/org/aw/rr/cleanup/haz_waste_docs/number3.pdf)

The letter indicated that EPA generally supported the proposal provided certain key hazardous waste requirements remain in-place. That letter formed the basis for development of this May 20, 1997 guidance memo:

[http://dnr.wi.gov/org/aw/rr/cleanup/haz\\_waste\\_docs/number4.pdf](http://dnr.wi.gov/org/aw/rr/cleanup/haz_waste_docs/number4.pdf)

The memo gave most responsible parties the opportunity to utilize the NR 700 cleanup process provided WDNR reserved its right to pursue enforcement action under hazardous waste authority if the responsible party did not implement the investigation and cleanup in a timely manner. A standard RP letter was developed and this document should continue to be used when dealing with remediation of hazardous waste releases. A copy of the letter can be found at:

[http://dnr.wi.gov/org/aw/rr/cleanup/haz\\_waste\\_docs/number5.pdf](http://dnr.wi.gov/org/aw/rr/cleanup/haz_waste_docs/number5.pdf)

In April 2001, WDNR submitted a proposal to EPA Region 5 which requested confirmation that the NR 700 series can be used as the basis for undertaking site investigations, evaluating and selecting remedies, establishing soil cleanup standards, and closing out these types of sites. The letter goes on to explain that the NR 700 series allows the use of soil performance standards, including the placement of barrier caps and the selection of natural attenuation as options for site remediation and closure. The letter also points out that selection of a soil performance standard as the appropriate remedy may also require the use of engineering or institutional controls. The letter is here:

[http://dnr.wi.gov/org/aw/rr/cleanup/haz\\_waste\\_docs/number6.pdf](http://dnr.wi.gov/org/aw/rr/cleanup/haz_waste_docs/number6.pdf)

EPA's concurrence with our request to continue utilizing the NR 700 series for addressing releases of hazardous waste was received on June 5, 2001 and is available here:

[http://dnr.wi.gov/org/aw/rr/cleanup/haz\\_waste\\_docs/number7.pdf](http://dnr.wi.gov/org/aw/rr/cleanup/haz_waste_docs/number7.pdf)

Further clarification from EPA on our use of Natural Attenuation for non-petroleum products was received on November 5, 2001 and is available here:

[http://dnr.wi.gov/org/aw/rr/cleanup/haz\\_waste\\_docs/number8.pdf](http://dnr.wi.gov/org/aw/rr/cleanup/haz_waste_docs/number8.pdf)

This means that sites with contaminated environmental media meeting the definition of hazardous waste could receive a case closure letter or a certificate of completion if the appropriate criteria in ch. NR 726 are met, including the use of soil performance standards and natural attenuation remedies. These sites would no longer be considered hazardous waste land disposal facilities and would not be required to meet the closure and long-term care requirements set out in ch. NR 664.

## **II. HAZARDOUS WASTE DETERMINATIONS**

Both State and Federal rules require the generator of a solid waste to determine whether that waste is a hazardous waste. This requirement (see s. 291.21, Stats.) applies to contaminated media and other waste generated during remediation activities, as well as process wastes. There are 2 major ways that contaminated environmental media can become a hazardous waste. The first is if the media contains a listed hazardous waste, and the second is if the media exhibits a hazardous characteristic. In either case it is the waste generator's responsibility to determine if the media is by definition a hazardous waste. This can be accomplished by either testing the material using the methods set out in ch. NR 661, or by "applying knowledge". Unfortunately, no specific guidance exists on the criteria to use when applying knowledge, especially for contaminated media and therefore these decisions need to be made on a case-by-case basis. However, EPA has issued general guidance on how to make case-by-case determinations and these are summarized below.

Generators and other parties that may be directly involved in a cleanup should make a waste determination as early as possible in the remedial process, since the regulatory status and selected remedial option for contaminated soil or groundwater can significantly affect the overall cost and timing of the proposed project. This should normally be done at the Site Investigation Report (SIR) stage, prior to the Remedial Action Options Report (RAOR). As will be discussed in more detail later, the type of remedial action selected can affect whether or not the contaminated media is subject to regulation as a hazardous waste. The earlier a waste determination is made the more options that can be evaluated in order to ascertain the best alternative for a particular site.

If the generator wants WDNR review of their waste determination, they need to submit a \$500 "other technical assistance" fee in accordance with s. 292.55(1)(b), Stats., to the

Remediation and Redevelopment Program in the Region that has oversight for the particular project. Waste determinations submitted as part of a Site Investigation Report or a Remedial Action Options Report may be reviewed without the “other technical assistance” fee, provided the appropriate fee for review of the report is provided. Review of waste determinations on contaminated media is the responsibility of the RR Program with assistance from the Waste Program, as appropriate. Dialog and interaction between the programs during evaluation of waste determinations is encouraged. WDNR has developed the form “Remediation Site Hazardous Waste Determination” that can be used by responsible parties or waste generators to assist them in making and certifying waste determinations:

[http://dnr.wi.gov/org/aw/rr/cleanup/haz\\_waste\\_docs/4430-019.pdf](http://dnr.wi.gov/org/aw/rr/cleanup/haz_waste_docs/4430-019.pdf)

#### A. Listed Wastes

Chapter NR 661 Subchapter D includes a series of tables that identify certain waste streams that are, by definition, hazardous wastes. For example, spent cyanide plating bath solutions from electroplating operations are defined as an F007 listed hazardous waste and spent halogenated solvents used for degreasing are defined as F001 listed wastes. These “F” listed wastes are hazardous wastes from non-specific sources. There are also “K” listed wastes that are hazardous wastes from specific sources. An example is K106 that is wastewater treatment sludge from the mercury cell process in chlorine production.

The rules also contain a list of commercial chemical products and manufacturing chemical intermediates such as benzene or trichloroethylene (TCE) that would be considered listed hazardous waste if a person discards or intends to discard these products or intermediates. These would be considered either “U” listed or “P” listed wastes depending on the compound. Further, wastes or media derived from the treatment of a listed hazardous waste would be considered listed hazardous waste. As an example, activated carbon being used to treat groundwater contaminated with a listed hazardous waste would be considered listed hazardous waste under the “derived from” rule. Finally, solid wastes or environmental media that are mixed with listed hazardous waste are also considered hazardous waste under the “mixture rule”.

As discussed earlier, the “contained-in” policy states that contaminated environmental media is not itself a hazardous waste but requires management as a hazardous waste if it contains a listed waste or exhibits a hazardous characteristic. In remedial situations, it is often difficult to determine the source of contamination. EPA guidance indicates: “Where a facility owner/operator makes a good faith effort to determine if the material is a listed hazardous waste but cannot make such a determination because documentation regarding the source of contamination, contaminant or waste is unavailable or inconclusive, one may assume the source, contaminant or waste is not a listed hazardous waste”. The EPA guidance goes on to say: “Therefore, provided the material in question does not exhibit a characteristic of hazardous waste, RCRA requirements do not apply”.

As part of a good faith effort in making a waste determination, responsible parties should evaluate, as appropriate, information such as material safety data sheets (MSDS's), manifests, vouchers, bills of lading, sales and inventory records, accident reports, spill reports, inspection reports, and other available information. It may also be necessary to conduct interviews of current or former personnel who would have knowledge of the processes and hazardous materials used including waste handling or past spills.

Staff should utilize their knowledge and any readily available information when evaluating these determinations. When the RP or waste generator seeks WDNR review of their waste determination, the appropriate review fee along with all appropriate supporting information must be submitted to the RR Program in the appropriate region. In addition, the Remediation Site Hazardous Waste Determination form, as discussed above, may be submitted.

If after a good faith evaluation, the evidence on the source of the contamination is either unavailable or inconclusive, it should be assumed the contaminated media does not contain a listed hazardous waste. The following discussion provides 2 example situations.

*Example 1* - An individual proposes to renovate and redevelop a vacant shopping center. During an environmental audit, soil and groundwater are determined to be contaminated with tetrachloroethylene (PCE or "perc") in the vicinity of a former dry cleaning facility. In many instances, releases of PCE from dry cleaning operations results in media contaminated with listed hazardous waste. This is because environmental media contaminated by the release of spent PCE (provided the solvent contained 10% or more, by volume, PCE before use) or ex-situ management of media contaminated by product PCE would be considered to contain a listed hazardous waste.

In this example, the developer reviews all available operating records and also talks with several former employees about the operation of the former business. No documentation that could provide information on the source of the PCE contamination was identified. In addition, while the soil and groundwater investigation identified some locations with PCE impacts, the contamination appears to be randomly distributed across the shopping center and is at least several hundred feet from the former dry cleaner. A contamination source area adjacent to the former dry cleaners was not found. Based on this evaluation, the developer concludes there is inconclusive information to determine the source of the contamination and therefore the contaminated environmental media does not contain a listed hazardous waste.

If however, a source area is found adjacent to the former dry cleaning equipment or if interviews with former employees reveal discharges of spent PCE from the facility, then the contaminated media may be considered a listed hazardous waste.

*Example 2* - A Company is considering purchasing a building that was formerly used for paint manufacturing. They perform a Phase I and II Environmental Assessment in an attempt to define the potential sources of contamination at the site. The investigation



discovers petroleum related contaminants (benzene, ethylbenzene, toluene, and xylene) in the soil at various locations around the property. The Phase I indicated that the property was previously used for paint manufacturing (where benzene was a major ingredient) and that numerous underground petroleum tanks were also present on the property. An evaluation of existing records and discussions with a former employee indicate that the releases took place during the 1960's or early 1970's from both the manufacturing process and the petroleum tanks. However, a detailed evaluation was unable to identify whether the existing contamination is from the product benzene tanks or from the underground petroleum storage tanks, which are exempt from hazardous waste regulation for a number of compounds including benzene. Since the source of contamination is inconclusive the Company concludes that the soil would not contain a listed hazardous waste when excavated.

On the other hand, if the detailed evaluation revealed that high levels of benzene only was present adjacent to the former product benzene tanks, then the media may be a listed hazardous waste. Further analysis is necessary to define: 1) when the release occurred, 2) whether the release was due to a product spill or disposal, and 3) how is the contaminated media going to be managed, as these answers will determine the regulatory status of the material.

#### B. Characteristic Waste

Contaminated media can also be considered a hazardous waste if it exhibits the hazardous characteristic of ignitability, reactivity, corrosivity or toxicity. Chapter NR 661, Subchapter C, identifies the specific test methods that are to be used when determining if a material exhibits a hazardous characteristic. The characteristic most likely to apply to contaminated media is toxicity. Section NR 661.24 identifies the specific test method for determining toxicity, the Toxicity Characteristic Leaching Procedure (TCLP) test. The TCLP test is the current analytical procedure for determining if a waste or media is hazardous for toxicity. Regulatory limits have been established by rule in s. NR 661.24(2) – Table 2 for 6 pesticides, 8 metals, and 25 organic compounds. This document contains a list of compounds and their associated regulatory levels:

[http://dnr.wi.gov/org/aw/rr/cleanup/haz\\_waste\\_docs/number10.pdf](http://dnr.wi.gov/org/aw/rr/cleanup/haz_waste_docs/number10.pdf)

Contaminated media that has already been tested for total contaminant concentrations might not need to be tested for certain contaminants using the TCLP test. If the media contains less than 20 times the TCLP regulatory limit based on a total analysis, then it may be assumed it will show a value below the limit if a TCLP test was conducted for that contaminant. It may be necessary to conduct a TCLP test for contaminants that have regulatory limits but where total contaminant concentration tests have not done.

#### C. Determining if Contaminated Media is Hazardous Waste

For the purposes of this discussion, it is assumed that contaminated media meets the definition of a solid waste found in s. 289.01(33), Stats.

## 1. Exclusions

The first step in determining if a contaminated media is a hazardous waste is to evaluate whether the media is excluded from regulation under s. NR 661.04. The 2 most likely situations where remediation waste may not be regulated as a hazardous waste are petroleum contaminated media and Manufactured Gas Plant (MGP) waste. Each is discussed in more detail below.

### a. Petroleum Contaminated Media

When EPA published the Toxicity Characteristic (TC) rule in 1990 there was a provision that excluded petroleum contaminated media and debris from leaking underground storage tanks that failed TCLP for waste codes D018 to D043 from regulation as a hazardous waste. That exclusion has also been adopted in rule by WDNR as s. NR 661.04(2)(j). If the media is not a hazardous waste for any other reason (such as ignitability or TCLP for lead), and the tanks are subject to regulation under 40 CFR 280 (the Underground Storage Tank provisions), regulation as a hazardous waste is not required.

### b. Manufactured Gas Plant Waste

On March 13, 2002 EPA amended 40 CFR 261.24 to exclude MGP waste from TCLP testing. As a result of this action, the TCLP leaching test can not be used to determine whether MGP wastes are hazardous under Federal rules. Since MGP remediation waste is not a listed waste, it would only be classified as RCRA hazardous if it exhibited the characteristic of ignitability, reactivity, or corrosivity. MGP waste that is mixed with or contaminated by other non-MGP sources (i.e. spent solvents) would not be covered by this exclusion. The exclusion from TCLP testing has been adopted in Wisconsin under s. NR 661.24(1).

## 2. Process

As discussed above, the generator of a contaminated media is responsible for determining if the material is a hazardous waste. Determining whether contaminated media is regulated as a hazardous waste depends on whether the contaminant was a waste or product at the time of the release, the date the release occurred, and whether the contaminated media will be actively managed. Figure 1 is a flow chart that summarizes the process that is used to determine when a contaminated media is defined as hazardous waste. Figure 2 identifies the management options and requirements that apply to all contaminated media and will be discussed in more detail in Sections III and IV. What follows is a brief explanation of the analysis necessary to make a waste determination. While at first glance the flow chart appears extremely complex, the following summary should help make the process more understandable. The discussion goes from relatively straightforward to increasingly complex.

Step 1 – The first step a responsible party or waste generator needs to take is to determine if the media was contaminated by material meeting the definition of a listed hazardous waste or commercial chemical product. As previously discussed, this requires a good faith effort to determine the source of the contamination (see the Remediation Site Hazardous Waste Determination form, discussed above). If information on the source of the contamination is unavailable or inconclusive, the responsible party or waste generator may assume that the media is not contaminated by a listed hazardous waste.

Step 1a. – If the answer under Step 1 is no, (the media is not contaminated by a listed hazardous waste) then the responsible party or waste generator must make the same good faith effort to determine if the source of the contamination was from the release of a characteristic waste after the waste was defined as hazardous. If the material was a characteristic hazardous waste at the time it was released, e.g., the answer to this step is yes, go to Step 1c.

Step 1b. – If the answer under Step 1a. is no, (the source of contamination was not a characteristic hazardous waste) the next step is to determine whether the media will be managed in-situ or ex-situ. If management is to take place in-situ (for example, remediation is proposed to take place using a soil vapor extraction system), then active management has not occurred and the media would not be considered hazardous waste. The responsible party would follow the NR 700 process to evaluate the effectiveness of the remedy and to determine when the site is ready for closure. As discussed earlier, process wastes generated during the treatment of contaminated media must be managed in accordance with all applicable environmental regulations.

If management of the media will take place ex-situ (for example, excavation and off-site disposal) then the generator would need to determine if the media exhibits a hazardous characteristic through testing or applying knowledge. As an example, a company discovers a small area of foundry waste fill in an area where they were planning a large plant expansion. They determine that the material would not have met the definition of a listed waste, and since disposal took place in the 1970's the material would not be considered a characteristic hazardous waste at the time of disposal. Since the amount of material is relatively small, they choose to excavate the waste and send it off-site for disposal. At the point where the material is excavated (i.e. actively managed) they become the generator of a solid waste and must determine whether the solid waste is a characteristic hazardous waste. Based on available information they conclude that the potential contaminants of concern are cadmium, chromium, and lead. They subject representative samples of the waste to the TCLP leaching procedure test. The results indicated that all contaminant concentrations are below the appropriate regulatory levels and therefore the company is able to manage the excavated material as a solid waste.

Step 1c. – If the answer under Step 1a is yes, (the media was contaminated with a characteristic hazardous waste) then the RP or waste generator needs to determine if the media exhibits a characteristic in-situ. If the answer is no, then the media is not a hazardous waste. If the answer is yes, then the material would be considered a hazardous waste regardless of whether the media is managed in-situ or ex-situ.

When contaminated media does not meet the definition of a hazardous waste, it can be managed in accordance with ch. NR 718. The options for managing hazardous contaminated media are discussed in detail in Section III.

Step 2. – If the answer under Step 1 is yes, (the media was contaminated by a listed hazardous waste or commercial chemical product) then the generator needs to determine if the release was from a hazardous waste or commercial chemical product that was listed when the release occurred. This requires a good faith evaluation by the generator.

Step 2a. – If after evaluation, the answer under Step 2 is no (the media was not listed at the time of release) or if the date of the release is inconclusive, then the waste classification depends on whether the media will be managed in-situ or ex-situ. If an in-situ remedial option is selected, then the contaminated media is not actively managed and the hazardous waste requirements don't apply to the media. For example, a developer evaluating a former manufacturing facility determines that the available information clearly documents that the source of groundwater contamination is due to releases of spent TCE which would meet the definition of an F001 listed waste.

This evaluation also reveals that the only documented releases occurred at the facility prior to November, 1980 when the waste listings for TCE were promulgated. The contaminated media would become subject to the hazardous waste requirements if it were managed ex-situ (i.e. actively managed) since the media is newly generated at the time of excavation. However, if the selected remedy for the contaminated soil is in-situ soil vapor extraction then the contaminated media is not subject to the hazardous waste requirements and the remedy selection and implementation process would follow the NR 700 series.

Step 3. – If the answer under Step 2 is yes (the waste was listed at the time of release) then the RP needs to determine if the release was from a commercial chemical product or listed hazardous waste. This step is necessary since the regulatory requirements are different depending on whether the material was a waste or a product at the time of the release. In those situations where a commercial chemical product or manufacturing chemical intermediate is disposed of after the effective date of the listing, the material would be a listed hazardous waste upon release.

Step 3a. – If the answer under Step 3 is yes (a commercial chemical product was released) or the source of contamination is inconclusive, then the generator needs to determine if the remedy will consist of an in-situ or ex-situ option. As in steps 1b and 2a, in-situ treatment will result in the contaminated media not being subject to the hazardous waste requirements and the remainder of the remedial process would follow the requirements in the NR 700 series.

Step 3b. – If the answer under Step 3a is that an ex-situ remedy is planned, the contaminated media would be considered a listed hazardous waste unless a “contained-

out” determination can be made. Section IV outlines how contained-out determinations can be made.

Step 4. – If the answer under Step 3 is no, then the generator has concluded that the contamination was caused by the release of a listed hazardous waste that was listed at the time the release occurred. In this scenario, the contaminated media is subject to the hazardous waste requirements regardless of whether the waste is managed in-situ or ex-situ unless a “contained-out” determination can be made. Section IV outlines how contained-out determinations can be made.

If a contained-out determination can not be made and the RP or waste generator determines that treatment of media defined as hazardous waste is their preferred alternative, they would need to manage the material in accordance using one of the options identified in Section III. If a hazardous waste treatment variance was needed then in general the design, operational, and monitoring provisions in ch. NR 724 would be utilized to prepare the variance application. The major difference with the process to obtain a hazardous waste variance is that: 1) the applicant would be asked to issue a public notice summarizing the proposal and requesting public comment; 2) WDNR review and approval of the proposal is required; and 3) a review fee is required in order for the RR Program to initiate the review. Otherwise, the process is similar to the method currently being used by responsible parties and WDNR staff for addressing treatment of contaminated media that are not subject to the hazardous waste requirements.

#### D. Land Disposal Restrictions

In 1984, Congress passed a number of amendments to RCRA. One of those changes was promulgation of the Land Disposal Restriction (LDR) program that prohibited the land disposal of hazardous waste unless the waste meets specific treatment standards established by EPA. The treatment standards were established to substantially diminish the toxicity or mobility of hazardous waste so that short and long-term threats to human health and the environment are minimized.

On May 26, 1998 EPA promulgated the Phase IV LDR rule which established a new treatability group...contaminated soils...with standards particularly tailored to that material. Prior to this rule, soils that contained a listed hazardous waste or exhibited a hazardous characteristic were prohibited from land disposal unless they had been treated to meet the standards for hazardous process waste. The Phase IV LDR standards for contaminated soil require treatment that achieves a 90% reduction or to levels 10 times the Universal Treatment Standards (UTS) whichever is higher. The Universal Treatment Standards were initially promulgated by EPA in 1994 and have been incorporated into s. NR 668.48. WDNR has incorporated the Phase IV LDR rule into ch. NR 668.

Determining if an LDR standard applies to a particular contaminated media can be difficult. The following paragraph is a brief summary of EPA’s guidance for making this determination. First, the LDRs typically only apply to contaminated media after it is generated, and if it will be placed in a land disposal unit. Therefore, if contaminated

media is not removed from the land (i.e. generated), LDRs generally do not apply. In addition, if contaminated media is removed from the land, but never placed in a land disposal unit, the LDRs do not apply. Finally, as will be discussed in detail later, the LDRs do not apply to contaminated soil managed with an Area of Contamination (AOC) even if the soil is removed from the land. The LDRs generally do not apply to contaminated soil in-situ or force excavation of contaminated soil. If soils are excavated, the LDRs may apply as discussed in the examples below.

As part of the Phase IV rule, EPA promulgated a new LDR treatment variance process specific to contaminated soil. An LDR treatment variance is an approval by the appropriate regulatory agency that an alternative treatment standard is appropriate. An alternative LDR treatment standard may be approved if it is determined that compliance with the new standards would result in treatment to the point at which short and long-term threats to human health and the environment are minimized. This approach allows a site specific, risk based determination to supersede the technology based LDR standard under certain circumstances.

In 2006, WDNR completed the process to revise the NR 600 series to incorporate the provisions for LDR treatability variances. However, the rules require that the applications for alternative treatment standards be handled by US EPA.

*Example 1* - A generator is considering excavating soil that is contaminated with the spent solvent TCE. The release took place prior to 1980, which is prior to the time the waste listings and LDR standards were established for TCE. The soil does not exhibit a hazardous characteristic and contaminant concentrations are below the site specific health based direct contact levels. The RP concludes that the media does not contain a listed hazardous waste and the contaminated soil is not defined as hazardous waste even upon excavation. In addition, the LDRs do not apply to this contaminated soil since the LDR standards for TCE did not exist at the time of the release and the soil was not hazardous waste at the time of generation (i.e., when it was excavated). In general, if a waste was released prior to the time the applicable LDR standards were promulgated and the contaminated soil is not hazardous waste at the time it is generated (i.e. actively managed), the LDRs do not apply.

*Example 2* - A responsible party is considering excavating soil contaminated by a release of spent PCE meeting the definition of an F001 listed hazardous waste. Based on a review of available information, it appears the release took place in the early 1980's which was after the waste listings were established, but prior to the effective date of the LDRs for F001 wastes. The soil contains levels of PCE above the site specific health based direct contact levels and the responsible party determines the media "contains" a listed hazardous waste. If the soil is excavated prior to treatment it must meet the LDR standard for PCE before it could be land disposed. The applicable LDR standard for PCE is either a 90% reduction in concentration or 10 times the universal treatment standard (60 ppm) whichever is higher.

If the soil were treated in-situ to reduce the levels to below site specific health based direct contact levels a “contained-out” determination could be made and the excavated soil would be considered a solid waste upon generation. The LDR standards would not apply to the soil in this case. If the soil were treated ex-situ to meet the LDR standard and a site-specific health based direct contact level then the treated soil would no longer require management as a hazardous waste. If the soils are treated to the site specific health based levels, but not to the appropriate LDR standards, the soils can not be land disposed unless an LDR treatability variance is granted.

*Example 3* - A generator is removing soil contaminated by a spill of product benzene, which when excavated would be a U019 listed hazardous waste. The spill occurred in 2001, well after the date LDRs were established for this waste stream. The excavated soil must be treated to achieve the LDR standard for benzene which, based on the current hazardous waste management rules (NR 600 series), would be a 90% reduction in concentration or 10 times the universal treatment standard (100 ppm) prior to land disposal as a hazardous waste. If the excavated soil is treated to reduce the levels to below the appropriate LDR standard and below site specific health based direct contact levels, the generator could make a “contained-out” determination and the treated soil could be managed as solid waste.

### **III. MANAGEMENT OPTIONS FOR CONTAMINATED MEDIA DEFINED AS HAZARDOUS WASTE**

The previous section discussed the methodology and process that is utilized to determine if a contaminated media is subject to the hazardous waste requirements. This section identifies ex-situ management options for media defined as hazardous waste. In general, unless exempted by rule, the treatment, storage or disposal of hazardous waste (including media) requires a hazardous waste facility operating license or variance. Two notable exceptions are management of contaminated media within an Area of Contamination (AOC) or management within a Corrective Action Management Unit (CAMU). The following section discusses the rule exemptions including the various options available and the specific requirements that apply to each. Several examples are also provided in order to clarify the discussions.

#### **A. Exemptions by Rule**

Most of the exemptions to the licensing requirements of the NR 600 series are found in s. NR 670.001(3), Wis. Adm. Code. The provisions most likely to apply to remediation projects are the exemptions for wastewater treatment units and Publicly Owned Treatment Works (POTW's) which are used for the management of contaminated groundwater. In addition, recent changes to chs. NR 600 and NR 815 now allow the Department to consider requests for reinjection of treated contaminated groundwater for remediation purposes. Finally, generators that treat contaminated media in waste accumulation tanks or containers in accordance with the requirements in s. NR

670.001(3)(b)11. are exempt from needing a hazardous waste treatment license or variance. These exemptions are discussed in more detail below.

## 1. Wastewater Treatment Units

Chapter NR 670 contains 2 specific exemptions from licensing that could apply to the treatment of groundwater meeting the definition of hazardous waste. The first is found in s. NR 670.001(3)(b)5. and applies to wastewater treatment units. Section NR 660.10(141) defines a wastewater treatment unit, in part, as a device that is part of a wastewater treatment facility that is subject to regulation under either 33 USC part 1317(b) or 1342, which are the federal wastewater requirements. An example of this type of situation would be if a large manufacturing company was remediating contaminated groundwater defined as hazardous on their property. After evaluating the contaminant levels, they determine their on-site treatment facility could handle both the concentrations and volume of groundwater. The company works with the Department's Watershed Management Program to obtain their concurrence that the material can be adequately treated in accordance with the existing discharge requirements. Since their treatment facility meets the definition of a wastewater treatment unit, no hazardous waste operating license or variance is needed in order to initiate treatment operations.

The other exemption to licensing is for POTW's which accept hazardous waste (or groundwater defined as hazardous) for treatment or recycling. In order to be eligible for this exemption, the POTW must: a.) have a WPDES permit, b.) comply with the conditions of their permit, c.) comply with certain notification, manifesting, recordkeeping, and reporting requirements specified in s. NR 670.001(3)(b)9. and d.) meet applicable pretreatment requirements. In addition, if the contaminated groundwater will be stored prior to treatment in a unit other than a wastewater treatment unit, the storage must be done in accordance with a hazardous waste operating license or variance.

## 2. Reinjection of Contaminated Groundwater

Section 3020(b) of RCRA provides an exemption for underground injection of contaminated groundwater in conjunction with certain remediation activities. Specifically, injection of contaminated groundwater back into the aquifer from which it was withdrawn is allowed if: a) such injection is part of a response action under CERCLA or RCRA Corrective Action intended to cleanup contamination, b) the contaminated groundwater is treated to substantially reduce hazardous constituents prior to reinjection, and c) the response action will, on completion, be sufficient to protect human health and the environment.

EPA issued specific guidance, which interprets these requirements on December 27, 1989 and then supplemented that guidance on December 27, 2000. Both EPA guidance documents can be found at:

[http://www.dnr.state.wi.us/org/aw/rr/cleanup/haz\\_waste\\_docs/number12.pdf](http://www.dnr.state.wi.us/org/aw/rr/cleanup/haz_waste_docs/number12.pdf)



In the December, 2000 guidance EPA interprets the phrase “substantially reduce” to mean either ex-situ or in-situ treatment. Recent amendments to chs. NR 600 series and NR 815 allow the Department to consider requests for reinjection of treated contaminated groundwater defined as hazardous as part of site remediation activities.

### 3. Treatment in Generator Accumulation Containers and Tanks

Section s. NR 670.001(3)(b)11. provides an exemption from licensing for generators that treat their hazardous waste in accumulation containers and tanks, provided that the appropriate provisions in ss. NR 662.034, 662.192 or 662.220 are met. As an example, a company discovers some contaminated soil on their property that fails TCLP for lead. The estimated volume is approximately 30 cubic yards. They decide to treat the soil in roll-off containers with lime. As long as the treatment effort complies with the generator provisions in ss. NR 662.034, 662.192 or 662.220 are met., a hazardous waste treatment license or variance is not required. If the treatment results in the contaminated soil meeting the TC standard for lead, it could be managed as a solid waste. If the resultant solid waste is to be land disposed, it must also meet applicable LDR's. (Note: in this example the LDR treatment standard of 5.0 mg/l TCLP for lead would be met).

### B. Hazardous Waste Operating License

As discussed at the beginning of this Section the treatment, storage, or disposal of hazardous environmental media generally requires a hazardous waste facility operating license or variance. WDNR determined in the early 1990's that attempting to issue hazardous waste operating licenses for cleanup situations was not practical. Given the numerous other alternatives discussed in this Section, it is anticipated that virtually all cleanup projects involving hazardous media will be able to implement a remedy without the need for a hazardous waste facility operating license.

### C. Remediation Variances

When the State Hazardous Waste Management Act was first promulgated in 1978, the Statutes contained a provision that granted the Department authority to issue a variance from the requirement to obtain a license if it is determined that the application for or compliance with a license would cause an undue or unreasonable hardship for any person. A variance may not result in undue harm to public health or the environment and the duration of the variance may not exceed 5 years. The hazardous waste rules were recently amended to limit variances to remediation projects. The specific requirements for remediation variances are contained in s. NR 670.079, Wis. Adm. Code.

#### 1. Applicability of Variances to Remediation Cases

In 1987, EPA issued a guidance memo indicating RCRA authorized states with state waiver authority comparable to CERCLA 121(e) or RCRA 7003 could use those authorities to waive RCRA permit requirements as long as the state did so in a manner no

less stringent than allowed under corresponding Federal authorities. This guidance memo can be found here:

[http://dnr.wi.gov/org/aw/rr/cleanup/haz\\_waste\\_docs/number13.pdf](http://dnr.wi.gov/org/aw/rr/cleanup/haz_waste_docs/number13.pdf)

In the early 1990's the use of our variance authority to "waive" the need for a hazardous waste facility operating license (i.e. RCRA permit) for remediation cases was the subject of considerable debate between WDNR and U.S. EPA. Ultimately, EPA acknowledged WDNR could use our variance authority to waive the need for a state hazardous waste operating license provided we sent copies of the draft approvals to EPA for their review and concurrence.

In May, 2001 EPA issued a Federal Register Notice clarifying Wisconsin's use of hazardous waste variances. This document can be found at:

[http://dnr.wi.gov/org/aw/rr/cleanup/haz\\_waste\\_docs/number14.pdf](http://dnr.wi.gov/org/aw/rr/cleanup/haz_waste_docs/number14.pdf)

With respect to cleanups, the Federal Register Notice states that WDNR may use our variance authority: "in the manner consistent with sections 7003 or RCRA or 121(e) of CERCLA, as described in applicable EPA guidance." Further discussions with EPA resulted in them providing additional clarification on the use of our variance authority:

[http://dnr.wi.gov/org/aw/rr/cleanup/haz\\_waste\\_docs/number15.pdf](http://dnr.wi.gov/org/aw/rr/cleanup/haz_waste_docs/number15.pdf)

EPA has also informed WDNR that public participation is necessary for every proposed variance in order to be at least as stringent as the Federal permit waiver process. As a result of this mandate, s. NR 670.079 now contains specific provisions for public participation.

Under s. NR 670.079(3), the RP is required to issue a Class I public notice in accordance with ch. 985, Stats., in conjunction with preparing the variance application. The notice must describe the details of the proposed project, identify how additional information can be obtained, and list the WDNR contact person to whom comments can be sent. Under s. NR 670.079(4), WDNR will respond to the comments and then make a final decision on the proposal within 65 business days (approximately 90 calendar days).

## **2. Undue or Unreasonable Hardship Criteria**

Section NR 670.079(1) clearly states that: "For purposes of hazardous waste remediation, issuance of a treatment or storage license under this chapter would constitute an undue or unreasonable hardship." Also, this note is provided as further clarification:

"Note: For purposes of implementing this section, the department has determined that it would be an undue or unreasonable hardship to apply for, and wait for issuance of a hazardous waste treatment or storage license under s. 291.25, Stats., for the treatment or storage of remediation waste as part of the clean up a contaminated site. For example, in

order to clean up a contaminated site, it may be necessary to treat excavated soil that is hazardous. In this situation it may be an undue or unreasonable hardship to delay the cleanup of the contamination while awaiting the issuance of a hazardous waste treatment license. The remediation variance approval issued by the department will include operating requirements necessary to protect public health and the environment during site remediation.”

The purpose of this note was to clarify that remediation projects, by their very nature, were activities where the use of a variance is typically appropriate. Our standard practice is to view requests for remediation related variances as meeting the undue or unreasonable hardship criteria unless the applicant proposes an activity that was prohibited by rule (i.e. land treatment). It should be pointed out that meeting the undue or unreasonable hardship criteria does not mean the proposal is technically acceptable, only that the activity is eligible for a variance.

### 3. Information Necessary for Remediation Variances

Section NR 670.079 does not specify the information that must be submitted with a variance application. In practice, especially for remediation related variances, the Department has allowed applicants to limit the information they provide to what is necessary to justify the specific project.

For purposes of cleanup related variances, applicants should utilize the appropriate provisions in the NR 700 series to justify variance requests from a technical standpoint. This includes utilizing the design, operational, and monitoring provisions in ch. NR 724 as well as the soil cleanup standards in ch. NR 720 and the groundwater quality standards in ch. NR 140.

### 4. Processing Remediation Variances

The review of remediation related variance requests and renewals are the responsibility of Regional Remediation and Redevelopment Program with assistance from the Waste Management Program, as appropriate. Two copies of requests for variances and renewals (extensions) should be submitted to the appropriate Regional office. At the time of the submittal, the appropriate fee (or fees) required in ch. 670, Appendix II, must be submitted to the RR Program assistant in the appropriate Region. These fees are for the variance report review. Variance review fees may be waived if the review of the request is expected to take less than 4 hours. If the request is for more than one unit, such as for storage and treatment, the variance report review fees must be submitted for each unit. No review work should begin until the appropriate fee has been received. Regional staff need to send a copy of each variance request to the Corrective Action Section Chief for Wisconsin at EPA-Region 5 within 5 working days of receipt for their technical review. The Region should typically allow 2 weeks for EPA review. Copies of all final variance decisions should also be sent to EPA within 5 working days of the decision.

All variance requests and renewals under s. NR 670.079 are considered to be Type III actions under ch. NR 150, Wis. Adm. Code. Therefore, an Environmental Assessment Screening Worksheet is not required to be completed for any variance decision.

As discussed earlier, the RP is required to prepare and issue a Class I notice. They would also be asked to submit a copy of the notice as part of the hazardous waste variance application or as a supplement to the original submittal. Public comments will be sent to the RR Project Manager who will respond to the comments received. Most remediation related variances will not require a renewal or extension. However, if a renewal or extension becomes necessary, the Department must issue a notice indicating the public has the opportunity to request an informational hearing on the proposal, if the intention is to grant the variance renewal.

Most variance approvals or conditional approvals should utilize a letter format, similar to other approval documents issued by the Remediation and Redevelopment Program. If deemed necessary by the Regional RR Project Manager or Team Supervisor, a variance could be issued in a Findings of Fact/Conclusions of Law format. Regardless of which approach is selected, Project Managers are encouraged to send a draft version of the approval to the applicant for review and comment prior to issuing the final decision. In accordance with Manual Code, final variance decisions should be issued under the signature of the Regional Air and Waste Leader.

Final variance approvals may require inspections of hazardous waste management units by Department staff and the payment of the hourly inspection fee under ch. 670, Appendix II.

#### D. Area of Contamination Policy

On March 8, 1990 in the Preamble to the National Contingency Plan (NCP), EPA first articulated the Area of Contamination (AOC) policy. This policy indicates that EPA interprets RCRA to allow certain discrete areas of generally dispersed contamination to be considered RCRA units (usually landfills). Because an AOC is equated to a RCRA land-based unit, consolidation and in-situ treatment of hazardous waste within an AOC does not create a new point of hazardous waste generation for the purposes of RCRA. This interpretation allows wastes to be consolidated or treated in-situ within an AOC without triggering the land disposal restrictions (LDR's) or minimum technology requirements (MTR's).

The AOC policy may be applied to any hazardous remediation waste (including non-media wastes) that is in or is on the land. As an example, a developer performs a Phase I and II evaluation on a prospective property. This analysis confirms that the property was previously used for foundry waste disposal from the 1960's until the early 1980's. Sampling showed that foundry wastes were present over a large portion of the property and lead was present in the waste at levels that may result in exceedances of the TCLP regulatory levels. The volume of waste is such that complete removal of the material is not practical. Instead, the developer wishes to consolidate the waste within the footprint

of the building as the mechanism to address the direct contact issue. The developer concludes the waste material is “generally dispersed” across the property and proposes to designate an AOC which would allow consolidation without resulting in the generation of a new waste. If the AOC remedy is found to be acceptable by WDNR, a waste determination is not necessary and as a result, TCLP testing of the material being consolidated would not be required.

The AOC policy only covers consolidation and in-situ waste management techniques carried out within an AOC. Ex-situ management such as treatment activities or off-site disposal is not covered by the AOC policy. In a March 13, 1996 guidance memo entitled: “Use of the AOC Concept During RCRA Cleanups”, EPA clarified that in addition to Superfund cleanups, the AOC policy also applies to RCRA cleanups including those being implemented under State authority. The memo can be found here:

[http://dnr.wi.gov/org/aw/rr/cleanup/haz\\_waste\\_docs/number17.pdf](http://dnr.wi.gov/org/aw/rr/cleanup/haz_waste_docs/number17.pdf)

On May 31, 1994 WDNR issued a guidance document entitled: “Definition of Land Disposal and Activities that Constitute Placement”, found here:

[http://dnr.wi.gov/org/aw/rr/cleanup/haz\\_waste\\_docs/number18.pdf](http://dnr.wi.gov/org/aw/rr/cleanup/haz_waste_docs/number18.pdf)

As part of that memo, it was stated that “simple consolidation within a single AOC will no longer be required to obtain a hazardous waste license, variance or waiver nor will they have to occur in units that meet the standards for land disposal facilities”. Since that time there have been varying interpretations of this guidance. In order to clarify the Department’s position on the use of EPA’s AOC policy, a letter was sent to EPA on March 19, 2001 requesting their concurrence that WDNR could continue to use their AOC policy. On April 6, 2001 EPA responded that “WDNR may continue to implement EPA’s March 13, 1996 memo at facilities the state is managing”. Copies of WDNR’s March 19, 2001 letter and EPA’s April 6, 2001 response can be found at:

[http://dnr.wi.gov/org/aw/rr/cleanup/haz\\_waste\\_docs/number19.pdf](http://dnr.wi.gov/org/aw/rr/cleanup/haz_waste_docs/number19.pdf)

Therefore, use of EPA’s existing AOC policy remains a viable and appropriate tool for use at cleanup related projects.

EPA’s guidance defines an AOC as a land disposal unit (typically a landfill), which includes non-discrete land area on or in which there is generally dispersed contamination. The guidance goes on to indicate that the definition of a landfill does not include discrete, widely separated areas of contamination. Waste consolidation from different AOC’s are subject to any applicable RCRA requirements regardless of the volume of waste or the purpose of the consolidation. EPA does not define the terms “generally dispersed” or “widely separated” and as a result inconsistent interpretations on when consolidation within an AOC is appropriate have resulted.

In January, 2002 WDNR submitted a letter to EPA regarding implementation of EPA's AOC policy. On February 5, 2002 EPA responded to that letter. A copy of the letters can be found at

[http://dnr.wi.gov/org/aw/rr/cleanup/haz\\_waste\\_docs/number20.pdf](http://dnr.wi.gov/org/aw/rr/cleanup/haz_waste_docs/number20.pdf)

WDNR's letter stated that it would allow Project Managers to continue to use their judgment, in a reasonable, common-sense manner on a site-specific basis, as to when contamination at a site would be considered "generally dispersed" and therefore potentially able to utilize the AOC policy. The technical requirements set forth in the NR 700 series, including ch. NR 718 would form the basis for determining the merits of the proposal. If approval is granted by WDNR, the act of consolidating the contamination would not constitute "active management" and therefore would not be considered hazardous waste generation. As a result, LDR's and MTR's would not be triggered by these consolidation efforts. In those situations where the proposal calls for consolidation of widely separated areas of contamination, the CAMU rule, a hazardous waste variance or other appropriate regulatory authority should be utilized.

#### E. Corrective Action Management Units

On February 16, 1993 EPA promulgated the Corrective Action Management Unit (CAMU) rule. The major purpose of the CAMU rule was to provide additional regulatory flexibility in order to expedite and improve remedial decisions involving hazardous remediation waste. WDNR promulgated an identical rule on June 1, 1995 and received authorization from EPA to implement the rule on October 4, 1999. This gave WDNR the authority to designate and approve a CAMU for the purpose of managing (i.e. treating, storing, or disposing of) hazardous remediation waste. Under these rules, hazardous remediation waste could be placed into a CAMU without triggering the applicability of the Land Disposal Restrictions (LDR's) or the Minimum Technology Requirements (MTR's). Hazardous remediation waste generated at a facility but outside of a CAMU, or releases that migrate beyond the facility boundary could be consolidated into a CAMU without triggering the LDR's or MTR's. Finally hazardous remediation waste could be moved between 2 CAMU's or excavated from a CAMU and treated in a separate unit (either inside or outside of a CAMU) and then redeposited within the CAMU without triggering LDR's or MTR's.

When the CAMU rule was initially promulgated, a lawsuit was filed by several interested parties. The lawsuit was stayed for many years as EPA undertook a series of actions to address the issue of how hazardous contaminated media is managed during cleanups. In early 2000, EPA completed a settlement agreement with the litigants that resulted in the need for some changes to the original rule. The most significant changes are the inclusion of design and treatment standards for CAMU's that will be used for permanent disposal of contaminated media, and expansion of the requirements for obtaining public input.

EPA promulgated a revised CAMU rule in January, 2002. The rule was adopted in ch. 664, Subpart S. The new rule includes a provision that gives states currently authorized

for the CAMU rule (which Wisconsin is) a 3-year authorization by rule so that we can continue to implement the new provisions if a formal request was submitted by March 22, 2002. WDNR submitted the necessary information and was granted interim authorization by EPA to continue oversight responsibilities for CAMU applications. However, this authorization has now expired. WDNR intends to apply for final authorization shortly after recent changes to the NR 600 series become effective.

While the CAMU rule provides some additional flexibility when dealing with hazardous contaminated media, in most cases our existing hazardous waste variance authority should be used in lieu of designating a CAMU. This is especially true for those situations where a variance is being used to allow storage and/or treatment of hazardous contaminated media. There may be some instances where on-site disposal of hazardous contaminated media is being considered where designation of a CAMU would be appropriate.

#### IV. DETERMINING CONTAINED-OUT CONCENTRATIONS FOR CONTAMINATED MEDIA

Section II laid out the process for determining if contaminated environmental media is hazardous waste. In many instances, ex-situ management is necessary for contaminated media to be considered hazardous waste. Section III identified the various methods that are available for approving a specific management option for hazardous contaminated media. This Section describes the criteria to be used in order to determine when the media no longer must be considered hazardous waste. This discussion is summarized in Figure 2.

##### A. Media Containing a Listed Waste

As discussed earlier, contaminated media is itself not hazardous waste but may require management as a hazardous waste if it contains listed hazardous waste. EPA guidance indicates that media containing hazardous constituents from listed hazardous waste above health based levels is considered to contain hazardous waste. A “contained-out” demonstration shows that the media contains concentrations of the hazardous constituents that caused the waste to be listed to be below health based levels. The list of constituents that caused a waste to be listed is in ch. NR 661, Appendix VII, listed by waste number. Appendix VIII of that chapter contains an alphabetical list of all hazardous constituents that are the basis for the waste listings. For purposes of implementing this guidance, soil, sediments or groundwater contaminated with a listed hazardous waste will no longer be considered to contain a listed hazardous waste if any of the following criteria are met.

If in-situ or ex-situ treatment of the media is needed in order to achieve contained-out levels, then that is treatment of a hazardous waste and would have to be done in accordance with one of the management options outlined in Section III, above. Simply diluting the media with uncontaminated or less contaminated media to achieve the contained-out levels is prohibited under the LDR rules.

As required by EPA guidance, if a generator or RP wishes to pursue a “contained-out” determination for contaminated media, including soil or groundwater, Department approval of the calculated levels is necessary. Responsible persons who want WDNR review of a contained-out determination need to submit a \$500 “other technical assistance” fee in accordance with s. 292.55(1)(b), Stats., to the Remediation and Redevelopment Program in the Region that has oversight for the particular project. Contained-out determinations submitted as part of a Site Investigation Report or a Remedial Action Options Report may be reviewed without the “other technical assistance” fee, provided the appropriate fee for review of the report is provided. Review of contained-out determinations on contaminated media is the responsibility of the RR Program.

It should be noted that “contained out” decisions are only used for determining the regulatory status of the contaminated material – specifically, whether the material is a listed hazardous waste or not. If the waste generator or responsible party proposes to manage the contaminated media in a manner other than disposal in an approved solid waste landfill, then further evaluation to determine if the preferred management option is appropriate would be necessary.

#### 1. Soil and Sediments

The ch. NR 720 RCLs may be used as appropriate health based levels for soil contained-out determinations or for sediment contained-out determinations when sediments are managed like soil. For cases where a Responsible Party proposes to manage contaminated soil or sediments in an approved solid waste landfill, a “contained out” determination can be made when the constituents of concern are below site specific, direct contact (i.e. ingestion/inhalation) health based levels. Contained out determinations can rely on ch. NR 720 Table 2 values or levels that are calculated using the general provisions in s. NR 720.19(5). However, it is not necessary to calculate/determine a cumulative excess cancer risk or a cumulative hazard index value when making “contained-out” determinations, if disposal will occur in an approved solid waste landfill. Industrial land use assumptions may be used for soil that will be managed at an approved solid waste landfill.

Even though the soil or sediments may no longer require management as a hazardous waste, as discussed earlier, the generator must determine whether LDRs apply to the soil.

#### 2. Groundwater

Contaminated groundwater containing a listed waste remains hazardous until the ch. NR 140 Enforcement Standard (ES) is met. In most cases this will result in the appropriate LDR treatment standard being met as well.

#### B. Media Exhibiting a Hazardous Characteristic



Contaminated media that exhibits a hazardous characteristic upon generation also requires management as a hazardous waste. In these cases the media remains hazardous until the characteristic is removed and, if applicable, until the appropriate LDR treatment standards are met. For example, contaminated soil from a remediation project is being excavated and temporarily accumulated on-site in tanks or containers. Samples of the soil have concentrations of lead greater than or equal to 5.0 mg/l when subjected to the Toxicity Characteristic Leaching Procedure (TCLP). This soil is by definition a characteristic hazardous waste. If that soil were treated to reduce leachable lead to less than 5.0 mg/l, it would no longer be considered a characteristic hazardous waste.

In most cases, removing the characteristic of toxicity also meets the LDR treatment standard. The soil LDR standard for lead is 5.0 mg/l (TCLP). In the previous example, once the soil is treated to remove the hazardous characteristic, the LDR standard for that constituent would also be complied with. Treating contaminated soil with heavy metals to below the TCLP regulatory levels will also meet the LDR UTS standards for all constituents.

Contaminated media that has already been tested for total contaminant concentrations might not need to be tested for certain contaminants using the TCLP test. If the media contains less than 20 times the TCLP regulatory limit based on a total analysis, then it may be assumed it will show a value below the limit if a TCLP test was conducted for that contaminant. It may be necessary to conduct a TCLP test for contaminants that have regulatory limits but where total contaminant concentration tests have not been done.

## V. REDEVELOPMENT ISSUES

### A. Background

There are thousands of brownfield properties located in Wisconsin, with many in need of local cleanup and redevelopment assistance. However, even when local governments have authority to acquire such properties, officials are often reluctant to do so because of concerns about potential federal and state environmental liability. In the past, local governments that acquired contaminated property, even if they did not purchase it, were considered responsible under Wisconsin's spill law because they "possessed" or "controlled" the contaminated property. In addition, many lenders were reluctant to finance loans for properties or take possession of properties that were contaminated or potentially contaminated because they feared being held responsible for investigation and cleanup costs.

The State's Land Recycling Law, which became effective in 1994 and has been subsequently modified several times since, provides certain limitations on a local government's environmental liability under the Spill Law and created incentives for local governments and certain economic development corporations to redevelop property, depending on how the property is acquired. Specifically, if a local government acquires property through tax delinquency, bankruptcy proceedings, condemnation, eminent domain, escheat, for slum or blight elimination, by using Stewardship funds, or from

another eligible local government, the local government is not responsible for investigating or remediating the hazardous substance discharges at the property. This exemption from liability protects the municipality unless the release is caused by an action taken by the municipality or due to failure of the municipality to take limited actions to prevent further spills.

In the past, the local government exemption from the state Spill Law did not apply to discharges from a federally regulated tank. The 1999-2001 state budget changes the exemption to include properties where a discharge was from a federally regulated tank. However, local governments are still responsible for removing abandoned underground storage tanks.

In order to encourage the redevelopment of brownfields properties and to alleviate the possible liability burdens faced by Lenders, the Land Recycling Law also included an exemption from the State's Spill Law for Lenders and Representatives. This exemption was intended to provide specific liability relief for Lenders and Representatives in order to encourage them to lend money for the cleanup and development of properties that may have contamination. As a result of this action, Lenders or Representatives that meet the specific conditions in state law will not be held responsible for a pre-existing hazardous substance discharge under the Spill Law. The situations where lenders can be released from liability include: normal lending, acquiring property through foreclosure, inspecting property, enforcement of a security interest in personal property and fixtures, and being a representative.

## B. Federal Exemptions

### 1. CERCLA

There are liability protections for local governments and lenders under the Federal CERCLA (Superfund) law. In October, 1995 EPA issued a policy clarifying that when a municipality acquires property through tax delinquency, foreclosure, demolition lien foreclosure, escheat, abandonment, condemnation, or eminent domain, the municipality will not be held liable for contamination by the Federal Superfund Program. This policy was subsequently adopted as law in 1996, and Section 101(20)(D) of CERCLA provides that: a unit of state or local government which acquired ownership or control involuntarily through bankruptcy, tax delinquency, abandonment or other circumstances in which the government involuntarily acquires title by virtue of its function as a sovereign entity, is not considered to be an owner or operator. This exemption also applies to municipalities that acquire property from a county that took the property through an involuntary action.

CERCLA also has a security interest liability exemption, which protects certain Lenders from liability. Generally, Lenders who take certain actions including taking title to the property primarily to protect a security interest and do not participate in the management of a facility or business will not be held responsible under CERCLA.

## 2. Subtitle I

Subtitle I of RCRA contains a security interest exemption that provides secured creditors (i.e. lenders) an explicit statutory exemption from cleanup liability for releases from petroleum underground storage tanks. In addition, EPA issued the Lender Liability rule for underground storage tanks that describes the specific conditions under which secured Lenders may be exempted from Subtitle I for discharges from petroleum underground tanks

### Subtitle C

are currently no federal liability exemptions under the RCRA Subtitle C hazardous waste requirements. With hundreds of Brownfields sites in Wisconsin with Subtitle C implications, there have been numerous situations where Local Governments and Lenders have expressed concerns about taking possession of these properties because of concerns about becoming the owner/operator and therefore potentially subject to state and federal liability.

#### C. WDNR Pilot Program

The lack of a liability exemption for sites with hazardous waste implications significantly reduces the ability of local governments and lenders to help cleanup and redevelop these types of properties. In order to provide additional incentives, WDNR worked with EPA and developed a pilot program for both local governments and lenders. Implementation of these two 48 month pilot programs would allow WDNR to use enforcement discretion, on a case-by-case basis, when determining whether to impose the RCRA corrective action requirements. The exemption criteria in ss. 292.11 and 292.21, Wisconsin Statutes will form the basis when determining whether to utilize enforcement discretion. As of April, 2006 there have been 5 projects that have applied for and received approval from WDNR that the RCRA corrective action requirements would not apply.

The specific details of the pilots are included in 2 letters dated November 29, 2002. These letters, along with EPA's concurrence on each of these proposals can be found at:

[http://dnr.wi.gov/org/aw/rr/cleanup/haz\\_waste\\_docs/number21.pdf](http://dnr.wi.gov/org/aw/rr/cleanup/haz_waste_docs/number21.pdf)

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**FIGURE 1**



